Preparticipation Screening Not Just for Sports

BY CHRISTINE KILGORE

WASHINGTON — Incorporating preparticipation screening into routine health supervision visits for all youth—not just those playing competitive sports—is one of the recommendations in an updated monograph being published by the American Academy of Pediatrics, Dr. David T. Bernhardt announced at the AAP's annual meeting.

The new recommendations, slated for released in the spring of 2010, also will weigh in on the use of ECGs and other tests to screen athletes for causes of sudden cardiac death, saying that such testing would be impractical, too costly, and challenged by false-positive test results, he said.

The new emphasis on wider, more routine use of the evaluation is in keeping with the growing emphasis on sports and other activities for good health, said Dr. Bernhardt, coeditor of the monograph, who is with the department of pediatrics and the division of sports medicine at the University of Wisconsin, Madison.

"Think about the kid playing a club sport, where there's no demand or regulation for a [signed preparticipation card], or kids skiing or playing at recess," he said. "They may be playing tag or hula-hoop with just as much vigor as the older kids who are participating … for a scholarship."

The overarching goal of the preparticipation evaluation, to promote the health and safety of athletes, "should be the same for every youngster coming into your clinic," he emphasized.

Incorporating an additional set of questions into the well-child visit will require some thought, Dr. Bernhardt said

Continued on following page

Assessment of Lipid Levels Can Be Simplified

In evaluating patients' vascular risk, lipid assessment can be simplified without sacrificing accuracy, according to researchers in the Emerging Risk Factors Collaboration.

"Expert opinion is divided" about whether measurement of apolipoproteins should replace that of cholesterol, the importance of triglyceride measurements, and the necessity of patients' fasting before physicians obtain these measurements. Now, analysis of data amassed in the Emerging Risk Factors Collaboration [ERFC] shows that these issues are not critically important, said Dr. John Danesh of the University of Cambridge (England) and his associates in the ERFC.

The ERFC pooled data from 112 prospective studies of cardiovascular risk factors involving 1.2 million subjects in 21 countries in western Europe and North America. Subjects' mean age was 59 years at baseline; median follow-up was 6 years.

Cholesterol levels and apolipoprotein levels were found to be equally useful in predicting vascular risk, with nearly identical hazard ratios for the two approaches. "This finding suggests that current discussions about whether to measure cholesterol levels or apolipoproteins … should hinge more on practical considerations … than on major differences in strength of epidemiological associations," the investigators said.

Moreover, hazard ratios for vascular disease were at least as strong among subjects who did not fast before testing as among those who did. In addition, triglyceride concentration showed no relation with vascular risk independently of cholesterol levels, Dr. Danesh and his colleagues said (JAMA 2009;302:1993-2000).

The ERFC is funded by the British Heart Foundation, the UK Medical Research Council, the BUPA Foundation, and GlaxoSmithKline. Dr. Danesh received funding from the British Heart Foundation; BUPA Foundation; diaDexus; European Union; Evelyn Trust; Fogarty International Center; GlaxoSmithKline; Medical Research Council; Merck Sharp and Dohme; National Heart, Lung, and Blood Institute; National Institute of Neurological Disorders and Stroke; Novartis; Roche; and Wellcome Trust.

—Mary Ann Moon

Continued from previous page

in an interview. "If we want to be uniform in asking the right questions, we should use the [health] form in the visits … but realistically, this won't happen," he said.

Asking families to complete the form before the visit, or incorporating at least parts of the form into the practice's overall history forms, could work, especially among practices using technology and electronic health records, he noted.

The issue of cardiovascular screening, and how best to prevent sudden cardiac death during intense physical activity, has become increasingly controversial since the last monograph on preparticipation screenings was published in 2004. The International Olympic Committee began endorsing ECGs for screening that year, and the European Society of Cardiology followed suit in 2005.

Although rare, sudden deaths of young competitive athletes have been reported more frequently in recent years and have been highly publicized. "More families have access to the Internet and read about [these tragedies] and what others are doing to screen" for sudden cardiac death, making it important for pediatricians and other physicians to be able to discuss the limitations of widespread screening with ECGs and other tests, Dr. Bernhardt said in the interview.

The European recommendations stem from a unique experience in Italy in which all athletes aged 12-35 years have been required for more than 25 years to obtain medical clearance—based on history, physical examination, and a 12-lead ECG—by certified physicians at designated screening centers. Italian investigators reported that the annual incidence of sudden cardiac death decreased by 89% in screened athletes in the Veneto region of Italy since the state-subsidized screening program was implemented (JAMA 2006;296:1593-601).

The screening program was predicated on an unusually high incidence of arrhythmogenic right ventricular dysplasia (ARVD) in the region, however, and the 89% drop reported in the JAMA study brings the rate of sudden cardiac death in the region "to about what we see in our country," Dr. Bernhardt said at the AAP meeting.

An analysis of sudden deaths in U.S. athletes since 1980 showed that about 4% of the sudden cardiac deaths in athletes under 35 since 1980 have been caused by ARVD, he noted (Circulation 2009;119:1085-92). The most common cause, reportedly responsible for about 36% of the sudden cardiac deaths, was hypertrophic cardiomyopathy. (Cardiovascular sudden deaths occurred at a rate of less than 80/year, according to the study.)

The incidence of sudden cardiac death is about 1 in 75,000 competitive athletes, Dr. Bernhardt said, so "you're truly trying to find a needle in a haystack."

Studies of ECG abnormalities in athletes have clearly shown that borderline or false-positive results are common. In one Italian study, investigators determined that the test's sensitivity was 51%, its specificity 61%, its positive predictive value 7%, and its negative predictive value 96%, he said.

The potential for false-positive results, combined with the size of the U.S. population, limited financial resources, and limited numbers of trained physicians, make the routine use of tests such as ECGs unwise in this country, Dr. Bernhardt added.

The AAP and its monograph cosponsors recommend a thorough personal and family history and physical exam as the best screening strategy. The monograph will incorporate the American Heart Association's recommendations for cardiovascular screening, along with questions about unexplained seizure and whether any family member or relative has died of sudden infant death syndrome, Dr. Bernhardt said.

The monograph will recommend that evaluations be performed in a primary care physician's office for better continuity of care, "rather than in station-based formats at schools or drugstores," he said.

The new recommendations will also address legal concerns such as the ability of primary care or team physicians to rescind participation clearance based on changes in an athlete's health status, he said.

The AAP, along with the American Academy of Family Physicians and several sports medicine associations, has been a sponsoring organization of previous versions of the Preparticipation Physical Evaluation monograph. The new monograph will be sold, but the updated history and physical exam forms contained in the book will be available free of charge through sponsoring organizations. ■